

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office MUN 21 NOV 1898

No. in Survey held at Stockton Date, first Survey 17th May Last Survey 14th Nov. 1898.

Reg. Book. on the S.S. "Alf." (Number of Visits 234) Tons ^{Gross} 3078. _{Net} 1969.

Master E. Hansen Built at Stockton By whom built Ropner & Son When built 1898.

Engines made at Stockton By whom made Blair & Gray L^d when made 1898.

Boilers made at Stockton By whom made Blair & Gray L^d when made 1898.

Registered Horse Power 250. Owners J. R. Olsen Port belonging to Bergen.

Com. Horse Power as per Section 28 246. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3. No. of Cranks 3.

Diameter of Cylinders 22 1/2, 37 1/2 & 61" Length of Stroke 42" Revolutions per minute 60. Diameter of Screw shaft 11.4" as per rule 12 1/2" as fitted.

Diameter of Tunnel shaft 11 3/4" Diameter of Crank shaft journals 12" Diameter of Crank pin 12 1/2" Size of Crank webs 19 1/2 x 8 1/2 B.

Diameter of screw 16'-0" Pitch of screw 16'-0" No. of blades 4. State whether moveable No. Total surface 73 sq. ft.

No. of Feed pumps 2. Diameter of ditto 3" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2. Diameter of ditto 4 1/2" Stroke 30" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2. Sizes of Pumps 9 x 10" 4 x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Three: Wings 3" dia Centre 3 1/2" dia In Holds, &c. For two 3" dia Aft. two 3" dia? Tunnel well 2 1/2" dia?

No. of bilge injections 1. sizes 7" Connected to condensers to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes 4"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the discharge pipes above or below the deep water line above

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers None How are they protected -

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock on stocks Is the screw shaft tunnel watertight apparently

Is it fitted with a watertight door Yes worked from upper platform.

BOILERS, &c.— (Letter for record (3)) Total Heating Surface of Boilers 3760 sq. ft. Is forced draft fitted No.

No. and Description of Boilers 2. S.E. Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 14.9.98 Can each boiler be worked separately Yes Area of fire grate in each boiler 500 sq. ft. No. and Description of safety valves to

each boiler 2 dir. act. Spring Area of each valve 7.06 sq. in. Pressure to which they are adjusted 165 lbs Are they fitted

with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork Behind bunkers diameter of boilers 14'-9"

Length 10'-0" Material of shell plates steel Thickness 1 7/32" Description of riveting: circum. seams mid d. r. lap long. seams d. butt str.

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 1 row 8 3/8" 2 rows 4 3/16" Lap of plates & width of butt straps 6 1/2" + 19 1/4"

Percentage of strength of longitudinal joint 89. Working pressure of shell by rules 177 lbs Size of manhole in shell 17" x 13"

Size of compensating ring 31 x 27 x 1 1/32" No. and Description of Furnaces in each boiler 3 Ribbed Material steel Outside diameter 41"

Length of plain part top 3'-6" 3" Thickness of plates 3 1/2" Description of longitudinal joint welded No. of strengthening rings 5

Working pressure of furnace by the rules 170 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 7/8"

Pitch of stays to ditto: Sides 7 1/2" x 7 1/2" Back 7 1/2" x 6 3/4" Top 7 1/2" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 194 lbs

Material of stays Iron Diameter at smallest part 1 5/16" Area supported by each stay 56 sq. in. Working pressure by rules 173 lbs End plates in steam space:

Material steel Thickness 1 1/8" Pitch of stays 15" x 15" How are stays secured d. nuts Working pressure by rules 185 lbs Material of stays steel

Diameter at smallest part 2 3/8" Area supported by each stay 225 sq. in. Working pressure by rules 196 lbs Material of Front plates at bottom steel

Thickness 1" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 12" Working pressure of plate by rules 240 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 7/8" Material of tube plates steel Thickness: Front 1" Back 1 3/16" Mean pitch of stays 9 1/8"

Pitch across wide water spaces 14" Working pressures by rules 195 lbs Girders to Chamber tops: Material steel Depth and

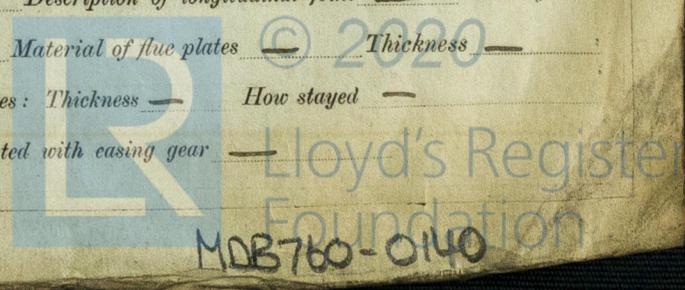
thickness of girder at centre 7 x 1 1/2" Length as per rule 27 1/4" Distance apart 7 1/2" Number and pitch of Stays in each 3. 7 1/2"

Working pressure by rules 178 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately -

Diameter - Length - Thickness of shell plates - Material - Description of longitudinal joint - Diam. of rivet holes - Pitch of rivets - Working pressure of shell by rules - Diameter of flue - Material of flue plates - Thickness -

If stiffened with rings - Distance between rings - Working pressure by rules - End plates: Thickness - How stayed -

Working pressure of end plates - Area of safety valves to superheater - Are they fitted with easing gear -



MDB760-0140

DONKEY BOILER— Description *Meredith's Patent*
 Made at *Stockton* By whom made *Riley Bros* When made *14.10.98* here fixed *Not hold*
 Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1812* Fire grate area *20 sq* Description of safety valves *d. Spring*
 No. of safety valves *2* Area of each *5.94 sq* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *6'-6"* Length *13'-6"* Material of shell plates *steel* Thickness *7/16"*
 Description of riveting long. seams *d. riv. lap* Diameter of rivet holes *19/16"* Whether punched or drilled *rim.* Pitch of rivets *2 7/16"*
 Lap of plating *4 1/4"* Per centage of strength of joint Rivets *71.9* Thickness of shell crown plates *7/16"* Radius of do. *39"* No. of Stays to do. *—*
 Dia. of stays. *—* Diameter of furnace Top *4'-5 3/8"* Bottom *5'-6 5/8"* Length of furnace *2'-9"* Thickness of furnace plates *19/32"* Description of joint *lap. d.k.* Thickness of furnace crown plates *9/16"* Stayed by *dished 36" rad.* Working pressure of shell by rules *84 lbs*
 Working pressure of furnace by rules *87 lbs* Diameter of uptake *3"* Thickness of uptake plates *1/2"* Thickness of *stay* tubes *5/16"*

SPARE GEAR. State the articles supplied:— *Tail shaft and propeller. Top and bottom end bolts and nuts. Main bearing and coupling bolts and nuts. Feed, bilge and donkey pump valves. —*

The foregoing is a correct description,
 FOR BLAIR & CO., LIMITED. Manufacturers of engines & main boilers

W. Blair DIRECTOR. 1898 May 17 28 June 7 27 30 July 5 11 18 18 19 21 28 Aug 3 11 23 25
 Dates of Survey while building } During progress of work in shops - }
 } During erection on board vessel - }
 Total No. of visits *thirty-four*

General Remarks (State quality of workmanship, opinions as to class, &c.)

These engines and boilers have been built under special survey, and are of good workmanship and materials, they have been properly fitted on board the vessel, and on completion, tried under steam, at moorings, with satisfactory results. —

*This vessel's machinery is now in a good and efficient working condition and in my opinion eligible to be noted: **L.M.C. 11.98.** — in the Society's Register. —*

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 11.98**

J.S. 21.11.98
A.C.H. 21.11.98

The amount of Entry Fee. . . £ 2 : 0 : 0 When applied for, 19-11-1898
 Special £ 32 : 6 : 0
 Donkey Boiler Fee £ : : :
 Travelling Expenses (if any) £ : : : 18-11-1898

John Sanderson
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUES. 22 NOV 1898

Assigned

Middlesbro' on Tues. —



Lloyd's Register Foundation